ELT-51103 "Computer networking I" exam questions

Please, answer in order of questions!

1. Why do we need layered protocols organization for communications, e.g., OSI?
2. Name at least two link-layer network topologies. Discuss advantages and shortcomings.
3. Why does IEEE standardize only two lower layers in Wi-Fi?
4. What are the functionalities of network (IP) layer?
5. Can two consecutive IP packets from a single source take different path in network? Why or why not?
6. Which protocol is utilized in tracert (traceroute) routines? How does they work?
7. Why two logical parts an IP address consists of? Why do we need that?
8. Why are two subnetwork addresses reserved in any subnetwork? Which are those?
9. Which of these subnets have more addressed for hosts: 10.0.0.0/8 or 172.16.0.0/12?
10. What is the difference between congestion control and flow control?
11. What is the basic principle of window-based flow control?
12. Which explicit congestion control mechanisms available for TCP?
13. Why do we need the slow start phase in TCP?
14. What are the two service models in the Internet?
15. Choose ands briefly describe one application layer protocol.